

REMARKS

The present application has been reviewed in light of the Office Action dated March 18, 2010. Claims 1-3, 6, 7, 43, 46, and 57 are presented for examination, of which Claims 1, 2, and 57 are in independent form. Claims 4, 5, and 8-56 have been withdrawn from consideration. Claims 1-3, 6, 7, 43, 46, 53, and 57 have been amended to define aspects of Applicant's invention more clearly. Favorable consideration is requested.

Applicant gratefully acknowledges the indication that Claims 2, 43, 46, and 57 have been allowed, and that Claim 3 includes allowable subject matter if rewritten in proper independent form. Claim 3 has been so amended and thus is in condition for allowance. This leaves independent Claim 1 unallowed.

The Office Action states that Claims 1, 6, and 7 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,879,158 (*Doyle et al.*). For at least the following reasons, Applicant submits that independent Claim 1, together with the claims dependent therefrom, is patentably distinct from the cited prior art.

As amended, Claim 1 is directed to a method of creating an electronic data set of a natural looking tooth for creating a dental prosthetic item, a tooth restoration, or a tooth model. A plurality of electronic data sets of a predetermined tooth type is generated by scanning a predetermined number of teeth of the predetermined tooth type.

Notably, for each electronic data set of the electronic data sets, at least one of correspondence points and correspondence structures are assigned for the predetermined tooth type in the electronic data set. Correspondence points identify correspondence between at least one point of the electronic data set and at least one point of one or more other of the electronic data sets. Correspondence structures identify correspondence between at least one structure of

the electronic data set and at least one structure of one or more other of the electronic data sets. Each correspondence point includes at least one of: a point of a fissure, a point of a cusp tip, a point of a cusp overhang, and a point of a marginal ridge. Each correspondence structure includes at least one of: a cusp structure, a fissure structure, and a marginal ridge structure. An average value is created from the electronic data sets based on the assigning of the at least one of the correspondence point and correspondence structure for each electronic data set. An average electronic data set derived from the average value is created as an electronic representation of a natural looking tooth having an average tooth surface with respect to the scanned teeth.

Doyle et al. is understood to relate to custom designed jigs for attaching an orthodontic bracket to each of a plurality of teeth in a desired position for positioning of each tooth by an archwire attached to each bracket (*see col. 1, lines 5-12*). *Doyle et al.* discusses that a digitized, three-dimensional coded virtual image of a patient's upper and lower teeth and gums can be generated by scanning a positive hard duplicate pattern of the teeth by conventional means, such as a coordinate measuring machine (CCM), or by laser scanning (*see col. 5, lines 1-6*). FIGS. 5a and 5b show an example of using laser scanning, wherein a laser beam 58 is shown as a series of parallel dotted lines scanning first and second teeth 54 and 56 (*see col. 5, lines 6-11*). In FIG. 5a, the laser beam 58 is aligned generally horizontally and scans over the teeth 54 and 56 by moving horizontally through a series of vertically spaced planes (*see col. 5, lines 11-14*). FIG. 5b shows the laser beam 58 can be aligned generally vertically and scan the first and second teeth 54 and 56, as shown by a series of horizontally spaced dotted lines (*see col. 5, lines 15-18*). A pair of laser scanning arrays, as shown in FIGS. 5a and 5b, provides the digitized, three-dimensional coded image of the set of teeth (*see col. 5, lines 18-20*).

At page 3, the Office Action states that:

In regard to step b) directed to “corresponding points and corresponding structures”, In Doyle et al it is noted that such points in a digital laser scanning are inherently and automatically assigned in measuring the dimensions - e.g. a central point on the top edge of the first central incisor.

The Office Action provides no factual basis and/or technical reasoning whatsoever to support an assertion that step b of Claim 1 necessarily is present in the subject matter of *Doyle et al.* (see M.P.E.P. § 2112 (“In relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art.” *Ex parte Levy*, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990)). For this reason alone, the Office Action is deficient.

Additionally, nothing has been found in *Doyle et al.* that is believed to teach or suggest that a correspondence point and/or a correspondence structure for a predetermined tooth type in each of a plurality of electronic data sets is assigned, wherein each correspondence point includes at least one of: a point of a fissure, a point of a cusp tip, a point of a cusp overhang, and a point of a marginal ridge, and each correspondence structure includes at least one of: a cusp structure, a fissure structure, and a marginal ridge structure. More particularly, nothing has been found in *Doyle et al.* that is believed to teach or suggest a method that includes “for each electronic data set of the electronic data sets, assigning at least one of correspondence points and correspondence structures for the predetermined tooth type in the electronic data set, wherein correspondence points identify correspondence between at least one point of the electronic data set and at least one point of one or more other of the electronic data sets and correspondence structures identify correspondence between at least one structure of the electronic data set and at least one structure of one or more other of the electronic data sets, wherein each correspondence

point includes at least one of: a point of a fissure, a point of a cusp tip, a point of a cusp overhang, and a point of a marginal ridge, and wherein each correspondence structure includes at least one of: a cusp structure, a fissure structure, and a marginal ridge structure," as recited in Claim 1. Accordingly, Applicant submits that Claim 1 is patentable over *Doyle et al.*, and respectfully requests withdrawal of the rejection under 35 U.S.C. § 103(a).

The other rejected claims in the present application depend from independent Claim 1 and are submitted to be patentable for at least the same reasons. Because each dependent claim also is deemed to define an additional aspect of the invention, however, individual consideration of the patentability of each claim on its own merits is respectfully requested.

In view of the foregoing amendments and remarks, Applicant respectfully requests favorable consideration and an early passage to issue of the present application.

Applicant's undersigned attorney may be reached in our New York Office by telephone at (212) 218-2100. All correspondence should be directed to our address listed below.

Respectfully submitted,



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